

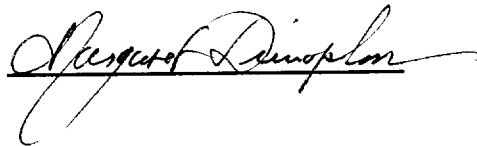
Learning to Write, Loving to Write, Living to Write

An Honors Thesis (Honrs 499)

by

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A handwritten signature in cursive script, reading "Margaret Dimoplan", is written over a horizontal line.

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## Statement of Purpose

This creative project is designed to show the diverse forms that writing can take, how writing can be used in a variety of capacities, and what I have learned through writing. Writing can facilitate personal pleasure and expression or it can be a means of evaluating one's knowledge of a subject. It is more than just a means of communicating a message, it is an art. I intend to show how my own writing has developed, improved, and expanded over the past four years. This collection of writings is more than a book of words, it is a tale of personal maturity in an academic setting. It includes research papers, personal journal entries, book and film reviews, literature analyses, and creative nonfiction pieces along with author's notes for each entry. Two new short stories are included as examples of the direction my writing has taken recently.

## Introduction

Ball State University has given me a plethora of excellent opportunities to diversify my interests, challenge my personal limitations, and expand my understanding of what it means to be a member of academia and the educated masses. These opportunities, however, would not have had such an impact in my life if I had not been able to reflect on them and evaluate them through writing. Writing has been the primary tool that has enabled me to express the changes that have taken place in my life as a result of higher educational experiences. Whatever the field of academic study or the type of extracurricular project, writing has become my organizer and outlet of information. It has made what I have learned exciting, permanent, and real.

Writing is more than a function. It is an expression of one's whole self. To read one of my finished pieces that I have labored with and triumphed over brings a joy that can not be equaled by any evaluator's mark. Finding personal satisfaction in my writing has freed me from the heavy burden of performing for someone else's stylistic preferences. Writing has become an exciting means of communicating my thoughts, feelings, and attitudes about anything and everything. I write for my own pleasure and fulfillment, not because I have to.

The educational system has done the art of writing a great injustice by failing to allow students freedom in their writing endeavors. I was a victim of this rigid view of writing and never developed a love for the art

until I came to Ball State University. I was introduced to freewriting early in my matriculation, and it has been essential in breaking the bondage of formalized and stale writing in my life. As the word suggests, freewriting is the freedom to write anything and everything without worrying about grammar, spelling, or a grade. The ideas get down and that is the important issue. I surprised myself when I began to freewrite, because I never realized that I had so many intriguing ideas to develop.

I have learned not only that writing can be entertaining, but that it is also vital to emotional and spiritual stability. Journaling has become an effective means of expressing my inner self without fear of judgment or insensitivity on behalf of another individual. Seeing the words that I am thinking aids me in maintaining a consistent and temperate nature. The many ideas that are brought up in my classes have free reign to develop and mature through my contemplation of them in my journal writing. My journals have become watersheds for future writing topics.

The possibilities for writing are endless. Each new piece broadens my experience of the world and forces me to step out of my comfort zones and experiment with new ideas and ways of expression. I have had wonderful opportunities to do formal research writing in a variety of areas such as genetics, abstract algebra, geometry, psychology, literature, and education. There is no better way to expand knowledge and understanding than to write about as many and as diverse subjects as one possibly can. Writing has helped me to become a better communicator as I

have accepted the responsibility of being a writer, which is to be understood clearly and vibrantly. And to this end, I hope to aspire.

## Entry #1

In a traditional sense, writing is used to express knowledge. The whole academic arena is focused and dependent on writing as the best tool to express what one knows and how well one knows it. Term papers, essay tests, and journals are used as the bulk of material to be evaluated by college professors in any field.

Writing in a scientific context was initially intimidating for me. I didn't know if I understood the material well enough to explain and interpret it in an educated way. What I soon realized was that when I actually began to write, I began to sort out and conceptualize the material better than before. The necessary ingredients to good writing, organization and clarity, enabled me to gain a more stable knowledge of the topic I was researching. I gained confidence in my understanding of ethics in genetics and learned that writing is more than just expression. It's a process of acquiring wisdom.

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Honors 299

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When confronting the issue of whether or not states ought to regulate who is genetically fit to have children, it is crucial to consider the consequences that may result from government involvement in the reproductive process. Standards of genetic acceptability, genetic discrimination, freedom of the individual, privacy of the individual, and genetic counseling are all concerns that must be discussed before a decision can be made.

In order for states to determine who is genetically fit to bear children, they would have to establish standards determining which traits are genetically acceptable and which are not. Such standards of acceptability may not always be universally agreed upon and they may not always be reliable. Blumenstyk (1990) claims that the information that is obtained from genetic screening will never be a completely accurate determiner of all genetic traits. Thus, states would be choosing their standards of acceptability on insufficient data. Since Byrne (1988) showed that many professional doctors do not even understand the intricacies of genetic disorders, we can not expect our state governments

to understand any better let alone make decisions concerning the implications of genetics in reproduction. In stating that a certain genetic condition is unacceptable for all people, the states may be neglecting an individual's ability to react with their surroundings. This is important since the environment has been found to play an important role in genetic development. According to Weinberg (1991), research has shown that genetically similar people have developed differently due to environmental influences. Also, if states have the power to regulate who is genetically fit to reproduce in reference to disease, there is not much keeping them from regulating other areas of determination such as eye color, hair color, or body shape and size. Such a dramatic emphasis would be put on genes as sole determiners of the human condition that prospective parents and their children would be accepted only on a conditional basis. In giving states the right to regulate reproduction on the basis of genetic acceptability, we would be giving them the power to manipulate the genetic make-up of future generations just as Hitler hoped to do with his pure Aryan race. It becomes a situation where "what we call Man's power over Nature turns out to be a power exercised by some men over other men with Nature as its instrument" (Meilaender, 1990).

Genetic discrimination is not a new problem, but may become an intensified problem if states are allowed to regulate reproduction for genetic reasons. Such regulation could be the beginnings of a modern day eugenics movement. Eugenics has been defined by Paul (1992) as an effort



to improve a society and the genetic qualities of the individuals in that society by choosing desirable traits and promoting them in reproduction. This is what the states would be doing by regulating who is genetically fit to have children. In essence, the government would be able to pick and choose what type of child is suitable for society. As a result, uniqueness would fail to thrive. Cases have been cited throughout history that deal with genetic discrimination. The terrors of Nazi Germany during World War II are a prime example of what can happen when people are discriminated against because of their genetic make-up. Blacks in the United States throughout the 1970's were involuntarily tested for the genetic sickle-cell trait and were consequently denied health insurance and employment, according to Zylke (1992). Employment and health insurance has also been denied to people who have tested positive for PKU on genetic screening tests (Aldous 1991). With these cases as precedent, it is highly probable that further genetic discrimination could arise if states are given the sole freedom to decide who can and can not reproduce. The rapid advancement of genetics each year could also pose problems for the states. In the past, many women who were at risk of having a child with a genetic disorder were sterilized on the advice of a geneticist. According to Clarke (1990), now that technology would allow these women to identify an affected fetus and terminate a pregnancy if necessary, they are still restricted from having a child.

The basic freedom of the individual to make his/her own decisions

would be restricted by the states if they were empowered to regulate reproduction. One's right to a marriage partner of one's own choosing and the right to procreate are fundamental privileges of human beings. If the states were allowed to regulate who is genetically fit to have children, they are also infringing on the rights of individuals to choose who they want to marry and have children with. Confining people to such limited choices robs them of the freedom to live life as they desire without being restrained for something they had no control over. Several states have already taken measures to rob certain individuals of their right to reproduce. Freedoms of the mentally retarded have been restrained constitutionally since 1927 when the Supreme Court ruled the states could involuntarily sterilize them, according to Zylke (1992). Some women who have been convicted of child abuse have been mandated by the state to have a form of compulsory contraception called Norplant surgically implanted in their forearms in order to keep them from reproducing (Platt 1991). If such desperate steps have been taken in the past to prohibit individuals from procreating, it is likely that governments would have to do something similar to prohibit genetically unacceptable persons from doing the same. This would require that the government take away rights that are vital to the individuality of a human being.

Privacy is another area of concern if states were given the right to regulate who is genetically fit to have children. The genetic information

that the states would need to obtain in order to keep someone from reproducing is both personal and private. Government would be intruding into the privacy of the marriage bed. Genetic information in the past has been misused and has caused many individuals to suffer unnecessarily. Brown (1991) asserts that states have taken minimal steps to assure that personal genetic information is managed properly and that genetics laboratories are of good quality. This fact makes it easy for private information to get into the hands of people who may abuse it. According to Beardsley (1991), only eight states currently have laws to prevent the misuse of genetic information. In addition, Beardsley (1991) states that if the Human Genome Privacy Act is passed by Congress, third parties would not even be able to have access to genetic information without the consent of the individual and the right of privacy would be extended legally concerning such information. This issue is imperative and must be dealt with before states are given the right to obtain an individual's genetic information.

The final area of concern in regard to the states regulating who is genetically fit to have children deals with the practical considerations of two people with genetic disorders such as Down Syndrome who desire to have children. It is true that such individuals may not be able to raise children on their own depending on the severity of their condition, but they should not be forced to give up their right to reproduce. They should be able to lead as normal a life as possible without government

interference. Genetic counseling is the key to this situation. Individuals with genetic disorders must know what their reproductive options are, what disorders their offspring could have, and what is required of them as parents. Counselors are to inform and give advice, not to demand that a couple not have children. The decision to have children or not to have children must be made solely by the individuals involved. A coerced decision is not respecting the rights of the individual to genuinely decide for themselves. If they were able to regulate reproduction on the basis of genetics, the states would be coercing couples into not having children. Clarke (1990) claims that such authoritarian advice should be replaced with informative counseling.

States ought not regulate who is genetically fit to have children. If they do so they are infringing upon individual rights of freedom and privacy, as well as discriminating against those who are not genetically acceptable. States are not equipped to make decisions as to what is universally genetically acceptable. Genetic counseling is essential in helping people with genetic disorders decide if they should have children, but states ought not force people into remaining childless.

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## Entry #2

What a shock it was for me to learn that writing papers was not just an activity for the English department. As a Mathematics major, I was expected to write a term paper on abstract algebra. What I expected to be the most challenging struggle of my life, turned into one of the best learning experiences in my life. Through the process of writing down and explaining the concepts that I was learning in class, I better understood for myself what abstract algebra really was. Writing helped me learn math!

Having to communicate clearly and effectively through my writing helped me to understand the importance of clarity in personal communication. In fact, when I want a message to get across to someone else without misunderstanding, I write it down. Writing enables me to concentrate on what I'm saying and gives me the freedom to edit what I say before someone hears it. Who would have thought that abstract algebra would lead to freedom of expression?

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### Understanding and Applying Abstract Algebra

The study of any subject requires a basic understanding of principles that are relevant to that particular field of study. This is why it is so important to recognize the various definitions in all areas of mathematics. These definitions are the foundation upon which mathematical concepts are built. Abstract algebra is no different. In order to comprehend the whole of abstract algebra, it is essential to be familiar with its various parts.

One of the fundamental concepts in this area of mathematics is the group. In general, a group is simply an algebraic system. It specifically consists of a set of elements  $G$ , together with one binary operation  $*$  defined on  $G$ . The notation for such a system is  $\langle G, * \rangle$ . Furthermore, a group must satisfy the closure, associative, identity and inverse laws. Closure means that when two elements in the given set are operated on by the specified binary operation the result is also an element of the given set. Since the associative law holds for all groups, any three elements of

a particular group that are operated on can be grouped together in any manner as long as their order is not disturbed. Having an identity element is to have an element in the group in question such that when you operate on it with another element  $x$  of the same group from either side the result is  $x$ . The existence of an inverse element requires that for every element in a group there must be another element in that group that can be multiplied to the first and produce the identity.

One primary example of a group is the set of integers under the addition operation or  $\langle \mathbb{Z}, + \rangle$ . We can show rather easily that this set is a group. A basic understanding of the set of integers allows one to see that if two elements of that set are added to one another, the sum would still be an integer. This proves the closure law. Addition of integers is also known to be associative, since it is possible to add any three integers in any order and get the same result each time. Elementary algebra students could verify the fact that the identity element in the set of integers is zero, because zero added to any integer is still that particular integer. The negative integers provide a set of inverses for the positive integers and vice-versa. This is because any positive integer added to its negative yields the identity zero, and any negative integer added to its positive counterpart likewise yields the identity. Since the integers under multiplication is not a group, it is not necessary to include the operation in the group notation. Thus, the integers under addition can be written simply as  $\mathbb{Z}$ .



From this definition, many other concepts are developed. The first of which is the abelian group. Any group that has an operation that is commutative is said to be abelian. Commutativity occurs when two elements of a group can be operated on in any order. Both the real numbers under addition  $\langle \mathbb{R}, + \rangle$  and  $\mathbb{Z}$  are abelian groups.

A subgroup  $S$  is a subset of a group  $G$  that is itself a group under the same operation as in  $G$ , but only in respect to elements in  $S$ . For any element in a particular subset, its inverse must also lie in  $S$ , and it must be closed under the same operation in  $G$ . The identity element of  $G$  must also be in  $S$ . The set of rational numbers,  $\mathbb{Q}$ , is a subgroup of the set of real numbers according to our definition. This can be shown by proving that the identity in  $\mathbb{R}$ , which is zero, is also in  $\mathbb{Q}$ , that the rational numbers are closed under addition, and that every element in  $\mathbb{Q}$  has an inverse element that is also in  $\mathbb{Q}$ .

Next comes the definition of cyclic subgroups. A cyclic subgroup generated by  $a$  is a subgroup of a group  $G$  under multiplication whose elements are  $a$  raised to any integer power. In symbols this would be  $\langle a \rangle = \{a^k \mid k \text{ is an integer}\}$ . (i.e. the cyclic subgroup generated by  $a$  is the set of elements of the form  $a$  to the  $k$ th power, where  $k$  is an integer.) A cyclic subgroup under addition is similarly denoted with the exception that  $a$  is multiplied by any integer rather than raised to a power. In the group  $\mathbb{Z}$ , for instance,  $\langle 1 \rangle = \{1, 1+1 = 2, 1+1+1 = 3, \dots\}$ .

At this point it would be wise to note the difference between the

binary operations of addition and multiplication when dealing with cyclic subgroups. Addition is combining an element with itself a specific number of times  $n$  by multiplying that element by  $n$ . Multiplication requires that a particular element be raised to the  $n$ th power in order to combine it with itself  $n$  times.

There are more consequences of the definition of all groups that should be mentioned. The left and right cancellation laws hold for all groups, and the identity of a group and the inverse of each element of a group are unique. With the preceding definitions and consequences well in mind, further exploration of abstract algebra is possible.

It is now appropriate to delve into specific proofs of subgroups, cyclic subgroups, and abelian groups. In order to do this, we must set the stage for what is to be proven. This includes a description of the elements being used and what exactly is going to be shown.

First, we will let  $G$  be a group with  $H$  as a subgroup of  $G$ . An essential definition now is needed. For every element  $x$  in  $G$ , we will define  $x^{-1}Hx = \{x^{-1}hx \mid h \text{ is an element of } H\}$ . It is obvious that multiplication is the binary operation implemented here, since the inverse element of  $x$  is written in the form of an exponent rather than a coefficient.

The first task that we will approach is to prove that under the aforementioned conditions,  $x^{-1}Hx$  is a subgroup of  $G$ . As noted earlier, a subgroup must be a subset of a group, contain the identity element of that

group, be closed, and have an inverse element for each element it contains.

Since  $x^{-1}Hx$  consists solely of elements in  $H$  and

$G$ , and  $H$  is a subset of  $G$ ,  $x^{-1}Hx$  is a subset of  $G$ . It is necessary that the identity element in  $G$  is also in  $x^{-1}Hx$ . If we let  $e$  be that identity element, we know that it must also be in  $H$ , since  $H$  is a subgroup of  $G$  and, therefore, must contain the same identity as  $G$ . Thus, it is evident that  $e$  can be written in the form  $x^{-1}ex$ , because  $x^{-1}(ex) =$

$x^{-1}x = e$ . Thus,  $e$  is an element of  $x^{-1}Hx$ .

Now, if we let  $h_1$  and  $h_2$  be elements of  $H$ , we can prove closure for our subset. By associativity of  $H$  and  $G$ ,

$$\begin{aligned}(x^{-1}h_1x)(x^{-1}h_2x) &= x^{-1}h_1(xx^{-1})h_2x \\ &= x^{-1}h_1eh_2x.\end{aligned}$$

Since  $e$  is the identity, the expression can be written as  $x^{-1}h_1h_2x$ .

Furthermore, this is an element of  $x^{-1}Hx$ , because  $h_1h_2$  is an element of  $H$  due to closure of  $H$ .

Next we are to prove that  $x^{-1}Hx$  has an inverse element for each of its elements. We know that  $h^{-1}$  must be in  $H$ , since  $H$  is a subgroup and  $h$  is one of its elements that must have an inverse. Thus,  $x^{-1}hx$  and  $x^{-1}h^{-1}x$  are elements of  $x^{-1}Hx$ . If we take the inverse of the former, we get  $(x^{-1}hx)^{-1} = x^{-1}h^{-1}(x^{-1})^{-1} = x^{-1}h^{-1}x$  since the inverse of a product is the product of its inverses. Also, the final result must be in  $x^{-1}Hx$  since we have already stated that  $h^{-1}$  is in  $H$ . Thus, it has been proven that  $x^{-1}Hx$  has an inverse for each of its elements, it contains the identity in  $G$ , it is closed and,

therefore, must be a subgroup of  $G$ .

Another interesting task that we can conquer is to prove that if  $H$  is cyclic, the  $x^{-1}Hx$  is also cyclic. Since  $H$  is given as cyclic, there is an element in  $H$  that generates the entire set. Let us continue to use  $h$  as an arbitrary element of  $H$ . If this particular element happens to generate  $H$ , then it is said to produce the cyclic subgroup generated by  $h$ , denoted  $\langle h \rangle$ . This means that every element of  $H$  can be written in the form  $\{ hk \mid k \text{ is an integer} \}$ . To prove that  $x^{-1}Hx$  is cyclic we need to show that  $x^{-1}Hx$  can indeed be generated by one of its elements. The subgroup in question would look like  $\langle x^{-1}hx \rangle$ , where the elements are in the form  $\{ (x^{-1}hx)^k \mid k \text{ is an integer, and } h \text{ is an element of } H \}$ . We must prove that  $x^{-1}Hx = \langle x^{-1}hx \rangle$ . This involves showing that every element in  $x^{-1}Hx$  is contained in the cyclic subgroup generated by  $x^{-1}hx$ , and that every element of that cyclic subgroup is contained in  $x^{-1}Hx$ . Since  $(x^{-1}hx)^k$  is the same as  $x^{-1}h^kx$ , it is clear to see that every element of  $\langle x^{-1}hx \rangle$  is in  $x^{-1}Hx$ . This is due to the fact that  $h$  raised to any power is still in  $H$ . Thus,  $x^{-1}h^kx$  is in  $x^{-1}Hx$ , which means that every element of the cyclic subgroup generated by  $x^{-1}hx$  is in  $x^{-1}Hx$ . Likewise,  $x^{-1}Hx$  is contained in  $\langle x^{-1}hx \rangle$ . We can say this because all the elements of the former subgroup are of the same form as those in  $\langle x^{-1}hx \rangle$ , namely  $x^{-1}h^kx$  since  $h^k$  is still in  $H$ . Therefore, both sets are contained within each other and are equal. This proves that  $x^{-1}Hx$  can be generated by one of its elements and thus is cyclic.

Lastly, let us prove that if  $H$  is abelian, then  $x^{-1}Hx$  is abelian also. To claim that  $H$  is abelian is to say that the commutative property holds for its elements. Specifically, if  $a$  and  $b$  are elements of  $H$ , then  $ab = ba$ . By using this fact about the elements in  $H$ , we can say that similarly  $x^{-1}Hx$  is commutative as follows:

$$\begin{aligned}(x^{-1}ax)(x^{-1}bx) &= x^{-1}a(xx^{-1})bx \\ &= x^{-1}aebx \\ &= x^{-1}abx \\ &= x^{-1}bax \quad (\text{commutativity of } a \text{ and } b)\end{aligned}$$

and

$$\begin{aligned}(x^{-1}bx)(x^{-1}ax) &= x^{-1}b(xx^{-1})ax \\ &= x^{-1}beax \\ &= x^{-1}bax.\end{aligned}$$

It is clear to see that  $(x^{-1}ax)(x^{-1}bx)$  and  $(x^{-1}bx)(x^{-1}ax)$  are both equal to  $x^{-1}bax$ . Thus,  $x^{-1}Hx$  is commutative and can be said to be abelian.

Further work with groups enables us to explore more complicated proofs involving subgroups. One such example involves proving that  $N(H)$  is a subgroup of a group  $G$ , where  $N(H)$  is defined as  $\{ x \text{ is in } G \mid x^{-1}Hx = H \}$  and  $H$  is a subgroup of  $G$ .

The first step in proving that a set is a subgroup is to show that it is a subset of the group in question. It is clearly evident that  $N(H)$  is a subset of  $G$ , since it consists entirely of elements from  $G$ .

Next, we must prove that the identity element in  $G$  is also in  $N(H)$ .

For convenience sake, we will use  $e$  as the identity in  $G$ . In order for  $e$  to be in  $N(H)$ ,  $e^{-1}He$  must be equal to  $H$  by definition of  $N(H)$ . The definition of the identity element allows us to write  $e^{-1}He$  as  $eHe$ . In set notation,  $eHe = \{ ehe \mid h \text{ is in } H \}$ . Again, the definition of the identity allows us to write this statement as  $eHe = \{ h \mid h \text{ is in } H \}$ . In simple terms, this is the same as  $H$  itself, since all the elements of  $eHe$  are those in  $H$ . Thus,  $e^{-1}He = H$  and the identity element of  $G$  is in  $N(H)$ .

Closure must also hold for  $N(H)$  under multiplication in order for  $N(H)$  to be a subgroup of  $G$ . If we let  $x$  and  $y$  be elements of  $N(H)$ , we can prove that their product is back in the set. In order for the product  $xy$  to be in  $N(H)$ ,  $(xy)^{-1}H(xy)$  must be equal to the subgroup  $H$ . Since  $x$  is an element of  $N(H)$ , it is true that  $x^{-1}Hx = H$ . Multiplying by  $y^{-1}$  on the left and  $y$  on the right we get  $y^{-1}x^{-1}Hxy = y^{-1}Hy$ . If we simplify this expression, we find that it can be written as  $(xy)^{-1}H(xy) = y^{-1}Hy$ , since the product of the inverses is equal to the inverse of the product. Knowing that  $y$  is an element of  $N(H)$  enables us to say that  $y^{-1}Hy = H$ . Substituting  $H$  in for  $y^{-1}Hy$  in the above equation yields the result  $(xy)^{-1}H(xy) = H$ . This proves that  $xy$  is in  $N(H)$ , and thus  $N(H)$  is closed.

The last portion of our proof involves showing that there is an inverse element in  $N(H)$  for each of its elements. For any arbitrary element  $x$  in  $N(H)$ , we must show that its inverse  $x^{-1}$  is in  $N(H)$  as well. We ultimately want to prove that  $(x^{-1})^{-1}Hx^{-1} = H$ , implying that  $x^{-1}$  is in  $N(H)$ . To begin, let us use the fact that  $x$  is in  $N(H)$  to give us the following

equation:  $x^{-1}Hx = H$ . Multiplying both sides of this equation by  $x$  on the left side gives us  $xx^{-1}Hx = xH$ . This is actually  $eHx = xH$ , since  $xx^{-1}$  is the identity. Now, we can multiply by  $x^{-1}$  on the right of each side of the equation. The result is  $eHxx^{-1} = xHx^{-1}$ . Simplifying the equation produces  $eHe = xHx^{-1}$ . This is the same as  $H = xHx^{-1}$ , because of the identity law. Furthermore,  $xHx^{-1}$  can be replaced with  $(x^{-1})^{-1}Hx^{-1}$  since the inverse of  $x^{-1}$  is  $x$ . This substitution yields  $H = (x^{-1})^{-1}Hx^{-1}$  which is just what we wanted to show. Thus,  $x^{-1}$  is in  $N(H)$ .

It is now obvious that  $N(H)$  is a subgroup of  $G$ , since it contains the identity element of  $G$ , is closed, and contains an inverse element for each of its members.

Our next feat will be to prove that  $N(x^{-1}Hx) = x^{-1}N(H)x$  where  $H$  is a subgroup of  $G$  and  $x$  is an element of  $G$ . This involves showing that each set is contained in the other. We will begin by proving that every element in  $N(x^{-1}Hx)$  is in  $x^{-1}N(H)x$ . If an arbitrary element  $y$  is in  $N(x^{-1}Hx)$ , then by the definition of this set,  $y^{-1}(x^{-1}Hx)y = x^{-1}Hx$ . Multiplying both sides of this equation by  $x^{-1}$  on the right, we get  $y^{-1}(x^{-1}Hx)yx^{-1} = x^{-1}Hxx^{-1}$ . Since the identity is produced by multiplying  $x$  and its inverse, the equality can be rewritten as  $y^{-1}(x^{-1}Hx)yx^{-1} = x^{-1}He = x^{-1}H$ . Now, we will multiply both sides by  $x$  on the left to get  $xy^{-1}(x^{-1}Hx)yx^{-1} = xx^{-1}H$ . Again, we are able to simplify the expression by the use of the inverse law to get the following:  $xy^{-1}(x^{-1}Hx)yx^{-1} = eH = H$ . It is true that  $N(x^{-1}Hx)$  is a subgroup and thus is

associative. Using this fact, the expression can be written as  $(xy^{-1}x^{-1})H(xy^{-1}x^{-1}) = H$ . Some investigation will lead to the discovery that the inverse of  $xy^{-1}x^{-1}$  is actually  $xy^{-1}x^{-1}$ , since it has been proven that the inverse of a product is equivalent to the inverses of each element multiplied in reverse order from what they were initially multiplied. Thus, we have  $(xy^{-1}x^{-1})^{-1}H(xy^{-1}x^{-1}) = H$ . This allows us to say that  $xy^{-1}x^{-1}$  must be in  $N(H)$ . Multiplying by  $x^{-1}$  on the left and by  $x$  on the right of the element  $xy^{-1}x^{-1}$  and the set  $N(H)$  yields the result that  $x^{-1}xy^{-1}x$  is in the set  $x^{-1}N(H)x$ . Applying the inverse law we see that  $x^{-1}xy^{-1}x$  is actually  $y$  multiplied by the identity on both sides. Since the identity multiplied by any element produces that particular element, the previous expression would suggest that the element  $y$  must be in  $x^{-1}N(H)x$ . We have just finished the first part of our proof since  $y$  was chosen as an arbitrary element of  $N(x^{-1}Hx)$  and was proven to be contained in  $x^{-1}N(H)x$ .

It is now necessary to prove that  $x^{-1}N(H)x$  is contained in the set  $N(x^{-1}Hx)$ . Let us say that  $y$  is any element of  $x^{-1}N(H)x$ . By use of the identity law, it is true to say that  $eye$  is still equal to  $y$  and thus is still in  $x^{-1}N(H)x$ . Since  $e = x^{-1}x$ , it is possible to state that  $(x^{-1}x)y(x^{-1}x)$  is in  $x^{-1}N(H)x$ . We know that this set is associative, because it is a subgroup. So,  $(x^{-1}x)y(x^{-1}x) = x^{-1}(xyx^{-1})x$  is in  $x^{-1}N(H)x$ . This equality allows us to assert that  $xyx^{-1}$  is in  $N(H)$ , and thus,  $(xyx^{-1})^{-1}H(xyx^{-1}) = H$ . Now, the inverse of  $xyx^{-1}$  is  $xy^{-1}x^{-1}$ , due



to the fact that the inverse of a product is the product of the inverses of the elements in reverse order. Now, our expression in simpler form is  $(xy^{-1}x^{-1})H(xy^{-1}x^{-1}) = H$ . By the associativity of  $N(H)$ , we can affirm the validity of the following statement:

$xy^{-1}(x^{-1}Hx)y^{-1}x^{-1} = H$ . All that remains of our proof is to multiply the previous expression by  $x^{-1}$  on the left and by  $x$  on the right and use the inverse law to get the identity. The outcome of this manipulation is as follows:

$$x^{-1}xy^{-1}(x^{-1}Hx)y^{-1}x^{-1}x = x^{-1}Hx$$

$$xy^{-1}(x^{-1}Hx)y = x^{-1}Hx$$

$$y^{-1}(x^{-1}Hx)y = x^{-1}Hx.$$

By the definition of  $N(x^{-1}Hx)$ , we can see that the statement above implies that  $y$  is an element of  $N(x^{-1}Hx)$ . Thus, it has been proven that  $x^{-1}N(H)x$  contains  $N(x^{-1}Hx)$ . Combining the first and second parts of our proof enables us to say that each set is contained in the other, and therefore the sets are equal.

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### Entry #3

Vocabularies are versatile, yet limited. I came to this conclusion after writing this next paper for my geometry class. I was a mathematics major at the time and was excited to get the opportunity to connect something I enjoyed very much, writing, with my academic major. What I didn't realize, however, was that writing for mathematics is much different than writing an essay on literature. The vocabularies in any area of science are much more specialized and limited than the whole of the English language available to any writer who is writing about literature.

It was much harder to be creative in my word choice when writing in the field of mathematics, since there are very few synonyms in mathematics. When trying to explain and describe a complicated and complex idea in layman's terms, it is difficult to change sentence structure as well. The whole tone of scientific writing is different from critical writing in literature. It is most beneficial to be direct and to the point when writing about mathematics, and this contradicted my natural instinct to embellish.

There was a positive outcome from this writing experience that encouraged me when writing other scientifically oriented papers. I found that my creative style in writing helped to make a sometimes dry subject like mathematics exciting or at least bearable.

Pamela Barber

Maths 240

Dr. Ludwig

April 16, 1992

### Transforming Geometry through Transformations

The study of transformational geometry is of great importance to geometry as a whole and to other areas of mathematical study such as linear algebra and group theory. Therefore, it is wise to have a good understanding of what this essential geometry is like. Transformational geometry is a fundamental concept and the means by which other geometries can be constructed and compared. Teachers should be well aware of the significance of this geometry and be prepared to help their students grasp the basic ideas of transformational geometry so they will be better equipped for future mathematics courses.

When introducing a course or part of a course that is dedicated to transformation geometry, a teacher should begin with a very simple definition of the concept of transformations. In general, a transformation is a definite correspondence between two different objects [15, 353]. The way in which a transformation is related to other areas of mathematics is that it is simply the geometric application of the concept of function

[7,554]. Since functions are common occurrences in higher mathematics courses, it is quite beneficial for students to begin working with them in introductory geometry courses where they are usually neglected.

Specifically, a transformation is a one-to-one and onto function from the set of points in the plane onto itself [2]. The independent variables in such a function are representative of points and lines that are to be transformed. These type of elements are referred to as the originals or models of the transformation. The elements or variables that are dependent are called correspondents or images. When the originals and images are points, the resulting transformation is termed a point transformation. Collineations are produced when the given transformation is dealing with lines as the originals and images.

With these foundational definitions cemented in the minds of the students, it is appropriate to investigate different types of transformations. Some particular transformations that are of importance are the identity and inverse transformations. The identity transformation maps any original to itself. Also, a transformation is said to have an inverse if it maps an original to an image and its inverse maps that image back to the original. Many transformations, such as translations, reflections and rotations, are isometries. That is, they are mappings that preserve distance.

At this point, it is necessary to explain some of the reasons teaching transformations is beneficial. First of all, transformations build

on the already familiarized and established geometry of Euclid. Students can feel comfortable with the material being presented and do not have to make a tremendous adjustment in their thinking.

Also, it is important to note that part of the reason that transformations are so valuable is that they can be represented visually. Students are allowed to "see" what they are learning, and thus, are more likely to retain the information. Practical techniques such as paper folding, drawing, cutting and pasting can be part of this visualization process. This visual imagery helps students understand analytical definitions and formal reasoning. After they have learned visually how to interpret compositions of translations and half-turns, students should be able to understand scalar multiplication of vectors and to find visual interpretations for algebraic formulas [1, 466].

Furthermore, it is agreed overwhelmingly that functions are the most important concept in the secondary level of mathematics, yet they are totally left out in the full year of geometry that is required [3, 165]. Translations could help alleviate this problem by using the line reflection as one example of a function. The application of the composition, inverse, identity, and one-to-one functions can be aided by the use of transformations. The equality of functions, the laws of commutativity and associativity, and the theory of groups can also be emphasized and explained in terms of transformations. This has many advantages including the fact that it provides a wealth of stimulating problems that

are not usually covered in the traditional geometry course. Also, students are given many opportunities to discover and prove theorems relating to transformations that are not overly difficult or that require extraordinary ingenuity [3, 165].

As mentioned previously, transformations are a unifying and integral part of the broader theory of transformations in mathematics. They even help break down stubborn barriers between geometry and algebra [5, 37]. While introducing modern mathematics, they continue to stress the development of basic geometry problem solving skills. Taking a transformational approach to geometry can be useful in analysis and advanced geometry as well [14, 21]. Applying transformational geometry to conic sections yields a similarity transformation that can help determine whether or not two parabolas are similar. Such a similarity transformation could be a rotation, translation, or reflection in a line. Ultimately, the development of theorems using cubic polynomials can be attained through transformations [8, 626].

There have been several suggested ways to teach the concept of transformational geometry, and three of them we will discuss. The first technique deals with a change in the actual curriculum of geometry. This curriculum would be based on transformations and still cover all of the basic concepts of traditional courses as well as touch on areas that were previously neglected. An informal introduction to postulates and theorems would be taken with an emphasis on the preservation properties

of reflections. This emphasis on reflection proofs would help students in writing their own proofs. Since symmetry is such an important aspect of geometry, a significant time would be devoted to this area. Other major features of this curriculum include the study of congruence and similarity in terms of transformations [14, 21].

The other two approaches to teaching transformational geometry are computer-oriented. The first of these uses a microworld called "Motions" to help students understand the details of the subject matter rather than the intricacies of carrying out the transformations. The purpose of this computer environment is to force students to see more than a static representation in diagrams. Mental actions are separated from the actual figure in an effort to allow students to see the errors in their thinking. The basic set up of the "Motions" program is a screen display of x- and y-axes in a grid with a flag in the home position. There are five parts to this teaching technique including 1) Playing Around, 2) Intuitive Investigations, 3) Symmetries of Plane Figures, 4) Systematic Investigations, and 5) General Motions. The first portion deals with a perceptual definition of each motion and specifically works with sequences of those motions. Motions are then examined in the second stage in respect to their influence on the properties of the flag. This stage also investigates relationships among translations and the net effect of performing two or more motions. Symmetries of various figures under different transformations can then be discussed in stage 3. The



next two parts of "Motions" involve formalizing and systemizing the investigations, defining sequences of transformations, and realizing that a motion is an isometric mapping of the plane onto itself. This method has been experimented with in many schools and has proved to be successful [13, 465].

Students can become familiar with transformations by using a microcomputer in the classroom. The importance of this teaching aid is enhanced with the computer's outstanding graphics capabilities. Four basic isometries are focused on in this type of course. They include translations, reflections, rotations, and glide reflections. Shape-preserving dilations, which are uniform expansions and contractions, are also discussed. Students are encouraged to select their own transformation and parameters and must respond to requests for points whose images are determined by the computer. Composites are often discovered and used with two or more transformations. Again, this technique seems to yield positive results for both student and instructor [12, 16].

Interesting materials for enrichment are readily available for the teacher of transformational geometry. These materials show how transformations can be practically applied in different areas of life, including art, music, and recreation.

When studying a unit on symmetry, the artwork of M.C. Escher can be used as an appropriate supplement. Only a basic understanding of

symmetry is needed to study Escher's mathematical masterpieces, yet one can even see examples of reflection, rotation, translation, and glide-reflection symmetry. Transparencies and slides are great visual aides for this and can help students develop their own pictures using symmetry [6, 647].

There are many correlations that can be drawn between geometry and music composition. If the keys of a piano are viewed as a number line with middle C as zero, transformational geometry can begin to take shape in the musical world. The music is presented in the form of a graph with note and time axes in which successive notes of the same tone are marked by a hash mark. Shifting this graph for a "serial composition" is called a transposition in music, but can be seen as translations in mathematics. Playing the graph backward would result in a retrograde movement or reflection. A glide-reflection can be represented by playing the music upside down. An upside-down and backward graphing resembles a rotation in transformational geometry. The basic tone row of the musical composition is analogous to the basic geometric figure. Just as there are four permissible operations on a basic tone row, there are precisely four types of isometries in transformational geometry [11, 523].

The recreation activity that utilizes transformational geometry is miniature golf. It is an application of reflections in the practical world. The reflections are use to find the path of the golf ball as it bounces off of the walls. In fact, reflections can help find the exact point of contact

for a ball to go into the cup. Students must realize that the angle at which the ball strikes a wall is the same as the rebounding angle. The procedure begins by determining the order of walls that the ball will hit and then moving backward from the hole. The student is to find the point reflection of the hole along the last wall, then the next to last wall and so on. The ball should be hit directly at the last reflection, and it will go immediately into the hole. This may be a prime example of a worthwhile field trip [10, 351].

Transformational geometry has undergone many changes throughout history and even as recently as 1970. Euclid makes no mention of transformational techniques in his classic work, Elements.

Because of this, transformations were usually described and not worked with. When Felix Klein discovered that all geometries could be created using transformations, many people started looking into them.

Transformations were not well known in the United States before 1930 and only recently have become an addition to textbooks [15, 353]. At a major mathematical seminar in France in 1959, many people agreed that geometry should be organized and unified by transformations. It was even suggested that Euclidean geometry be excluded and replaced with rotations, symmetries, and the group of isometries [5, 37-40].

It should be evident that transformational geometry is an essential part of secondary mathematics. Since its emphasis is relatively new, teachers have an obligation to be informed and to inform. This task may

seem rather large, but the amount of enrichment materials and teaching methods to assist one in this pursuit are more than adequate.

Transformations may be the geometry of the future, and it is a privilege to be able to see this happen! Are we future teachers up to the challenge?

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#### Entry #4

Writing is a vital connecting force. It joins what is learned in an educational setting with what is experienced in every day life. It combines the corporate with the personal and the distant with the intimate.

Viewing the film "Black Orpheus" was an interesting experience, but it was made memorable through my writing about it. I didn't just write a critique or personal opinion about the film, I was able to incorporate what I was learning in class at the time with what I saw on screen. This process helped me to make a formal learning opportunity relevant to a personal experience. What I was learning in class came alive on the paper as I related it to what I had seen in the film. Even though they were totally different pieces of art, the film and the classroom material were united through my own interpretation expressed in writing.

Pamela Barber

Dr. Brown

2-24-92

### "Black Orpheus"

Although Romanticism flourished in the mid-eighteenth and nineteenth centuries, it is still alive today in various creative forms. The ideas and emphases of this movement are evident in modern literary works and add to such works a dimension that is appealing to the common man. Originality and creativity were highly prized aspects of the Romantics that are still important in the arts. The works of the Romantics also revealed a love for the exotic and strange, a desire to expose personal emotions and sentimentality, and a tendency to use concrete images to represent abstract ideas. These and a number of other Romantic themes are brought out in the movie "Black Orpheus". The characters and plot are consistent with these ideas and aid in carrying the Romantic theme throughout the film.

Since imagination and creativity are essential to the Romantic motif, it is obvious that the transformation of a Greek cultural myth into the real life story of a South American Negro would represent Romantic originality. The wild, rhythmic music of "Black Orpheus" is a unique interpretation of the moving and life-giving music of the Greek Orpheus.



Just as the original Orpheus motivated nature through his music, so does Black Orpheus motivate his people through his dance company and guitar music. The ways in which the creator of "Black Orpheus" deals with the descension of Orpheus into hell is quite imaginative. Instead of creating a scene where Orpheus actually went into hell to save Eurydice, the movie portrays hell as a room full of papers that represent the dead. The statement "Whether I sweep or not there is still paper" reveals the continuous nature of death that is rather different than the imagery of death in the Greek myth. The pursuit of Eurydice by death is also unique. Everywhere she goes she is followed by a man in black. The harder she tries to escape the closer he gets to her. This reinforces the idea that death is inescapable.

The lifestyle and culture of the people represented in "Black Orpheus" are prime examples of the exotic nature of Romanticism. Allowing their bodies to be overcome with emotion and exaggerated movements, the dancers reveal a different level of expression than most of Western society is accustomed. Even the dress and costumes of the characters reveal a love for the strange. The flowing blue material of the sash that Eurydice's cousin wears is both beautiful and eerie. It seems to symbolize freedom as it blows and floats through the wind, and yet it gives a sense of something that is uncontrollable, perhaps death that is haunting Eurydice. The end of the film is quite strange as well. Orpheus, with the dead Eurydice in his arms, is knocked off the side of a cliff by a

rock that is thrown by his former love. I was shocked at this abrupt ending to the hero, but I realized it was just another example of the exotic emphasis of the Romantic ideals.

Many aspects of "Black Orpheus" are filled with emotions on the part of the characters and audience. As mentioned before, the wild dance of the people is gripping. Excitement stirs at the carnival as people jump and scream with fervor all the night through. A sensual tone is carried throughout the film in the relationships between the men and women. The playfully sexual scenes between Eurydice's cousin and her Navy man and romantic serenades by Orpheus are good examples of emotional scenes. Fear is used effectively during the scenes where Eurydice is being chased by death. One such scene occurs in the train station where Eurydice is trying to hide. It is very dramatic and disheartening to see Eurydice get electrocuted by Orpheus' own hand.

Just as the Romantic theme requires, "Black Orpheus" contains many concrete images that represent abstract images. The man dressed as a skeleton is one of the most obvious images of death. Seeing him ride away on the ambulance that carried Eurydice is immediately understood as the proclamation of Eurydice's death. A more subtle image is that of the sunrise as representative of the lamp of Romanticism. Throughout the entire movie, the two little boys believe that Orpheus made the sunrise appear by playing his guitar. They eventually found out that they could do the same thing if they played his guitar. In terms of Romanticism, this

would mean that life is illuminated through creative arts such as music and that every person can illuminate his own life if he pursues such virtuous goals. The dog, Cerberus, exemplified the vicious environment that awaited all who entered the door of hell which he guarded. His piercing bark and evil stare are a convincing image of the "underworld".

Even though "Black Orpheus" is a product of the twentieth century, it very well could have been right out of the Romantic period. Its originality, strangeness, sensuousness, and imagery is exactly like that of the Romantics. Thanks to the study of former works of literature we are able to preserve and build on different concepts that previous writers developed.

## Entry #5

I've often wondered why professors require essays to be written for final exams, especially when the subject is not English nor composition. Multiple choice, true or false, and short answer tests are much easier and less time consuming to grade. More material can be covered when using these types of tests as well. So, why are essays so popular when seeking to evaluate the culmination of a student's understanding over a semester?

My conclusion is that writing essays requires a complete and comprehensive knowledge of the material taught. There is no room for true understanding to be confused with guessing or chance. A student really has to know what they are talking about to do well on an essay exam.

Looking back on this final exam, I realize that there would have been no better way to communicate what I had learned that semester than to write about it. I was challenged to know the material so well that I couldn't "fake it" if I wanted to. In my opinion, writing is the best way to evaluate another person's knowledge.

Pamela Barber

Eng. 240

Final Exam

12-17-92

Emerson's exhortation to "enjoy an original relation to the universe" is calling people to leave lives that are based on tradition and retrospection and to create new lives that can truly be called their own. According to Emerson, anything that is separate from the individual or exists outside the human soul is considered to be part of the universe for that individual. In order to have an original relation to such a universe, Emerson suggests that we must rely on freshness and insight that does not come from reading books or studying history. He asserts that present generations do not think for themselves, but rather follow what others have claimed reality to be. These themes are represented in various works of American literature. The works of Henry David Thoreau and Nathaniel Hawthorne are prime examples of the practical application of Emersonian thinking.

One aspect of having "an original relation to the universe" is simply to live life anew and to find a unique existence that coincides with the values and principals that one holds. This requires being attentive and knowing when life has become so sterile and routine that an individual is no longer being true to self. Thoreau's Walden is full of examples of the

newness that can be found in life. The reason Thoreau initially moves into the woods is so he can separate himself from all the influences of society on a regular basis and live his life his own way. In the conclusion, he claims that it is the responsibility of mankind to obey the urgings of his soul and make changes in life if necessary. The new and exciting relation to the universe can only be found by searching our inner souls and acting on what is found to be of value. For Thoreau this includes exploring the other avenues and aspects of life that are available to us. Living at Walden was such an exploration for Thoreau. He failed to allow himself to be eaten away by the daily activities that waste our valuable time. His advice to his readers was to go back to the basics of life and not to allow our lives to be "frittered away with detail." To Thoreau, only truth was of any significance. As long as humans are true to themselves and their values, that is all anyone can ask of them. He asserts that we must say what we feel is right, not what others tell us is right.

Likewise, in Hawthorne's The Scarlet Letter, Hester and Dimmesdale experience what it means to create a new life for themselves and to be true to their feelings. When they plan to sail off to England together and leave the pains of their society behind them, they are establishing a fresh relation to their universe by changing the dull routine they had gotten into. For once they are going to be true to themselves. Simply the anticipation of starting a new life gives Dimmesdale hope of surviving. His physical energy is even increased and the people he passes on the road suddenly

seem different to him. After seven years of living a lie, he finally grasps the opportunity to change his course in life and create a new and unique relationship with the universe around him. Obviously, Dimmesdale does not get to see his dream come true. The years of hypocrisy and falsehood had taken their toll and Dimmesdale is kept from experiencing a new life. Even after the death of Dimmesdale, Hester remains true to herself by taking Pearl and escaping Boston to create a new world for herself across the ocean. In contrast to Thoreau, Hester's relation to her universe does not continue to change and bring new life. Instead, she returns to Boston and the life she had lived before. She exchanged the newness of life for the old routine to which she had become accustomed.

Another important part of having a unique relationship with nature is living a life of nonconformity and purpose. According to Thoreau, the great crime of society is conformity. When people fail to be themselves they lose sight of what life is all about. This is characteristic of those who "lead lives of quiet desperation." They resign to the standards of society no matter what the cost to themselves might be. Thoreau's personal reaction in Walden is to live life deliberately and with purpose. In his view, living life according to what someone else has found to be worthwhile is not beneficial for everyone. He asserts that what was true in another time may not necessarily be true today, therefore, we must trust only our own opinions not the opinions of the public. In "Resistance to Civil Government", Thoreau claims that he would never be part of a

society which he did not chose to join. As a result, he refused to pay taxes and was jailed. However, being incarcerated was of no concern to Thoreau because he was allowing his conscience to guide him and not the advice of those around him.

Similarly, Hawthorne exhibits this view of life through his characters in The Scarlet Letter. The symbol on Hester's dress expresses the young woman's refusal to totally conform to the wishes of her society. The scarlet letter was supposed to represent shame and scorn, but looks beautiful and elegant as Hester has decorated it. Hester's refusal to expose the father of her child is a dramatic example of nonconformity also. Although the pressure of society is weighing heavily on her and humiliation is abundant, she refuses to give in. By sheer will, she determines what is real and important in her life regardless of what her society claims. Even when the townspeople seemed to forgive her and expressed kindness to her, Hester refused to accept their friendliness. She simply points to her scarlet letter and reminds them that she wants to be separate from them. Hester's separation from her society is different than Thoreau's in a few ways. Instead of living life with a purpose of her own, she allow society to dictate to her what she can and cannot do. She must work for the townspeople as a seamstress in order to live. She also ignores or suppresses her feelings for Dimmesdale, because of the possible consequences that society may inflict upon her. In essence, she is doing the opposite of what Thoreau would do by being part



of a society that she did not chose to join.

Individuality was the focus of Emerson's concern when he challenged his readers to "enjoy an original relation to the universe." As seen in the works of Thoreau and Hawthorne, this type of a relationship is illustrated in different ways. Each character represents a different means of attaining this unique relationship and finding purpose in their lives.

## Entry #6

Essay exams are intimidating, because they require good writing without the valuable resources of time and word processors. They exhibit a writer's true ability to intelligently express thoughts and ideas. No thesaurus to expand word choice can be used, no editing sentence structures can be done, and no spell check can be run on the final product. Essay exams are raw writing and can only be excellently produced if a writer is experienced and comfortable with writing.

I believe these types of exams are wonderful preparation for beginning writers. They provide an environment where writers are forced to write out of their own knowledge base and to be creative with what they know. Essays exams help polish writers. Now, I didn't always feel this way. In fact, I used to dread in class essays. But as I continued to have practice writing such pieces, I became more comfortable and free when I wrote.

I was surprised to get this particular exam back and find that the professor thought it was one of my best works. It was organized, structured, deep, and flowing. My writing has developed to a point where I can express myself clearly and spontaneously. And that is exciting!

Pamela Barber

Dr. Jennings

Final Exam

Many critics would argue that Modern Literature is a "free for all" when compared to Victorian Literature. At first glance, novels of the modern period may seem sketchy, fragmented and disconnected. The fluid and straight-forward style of their predecessors seemed to escape the Modern authors. Looking more closely at a few representative novels, it is apparent that there are many points of connection in Modern Literature. In fact, there are some strong connections that bring real unity and closure to these novels.

The Rainbow is a story about the Brangwen family line and uses this fact as a unifying feature throughout. The connections between family members are extremely significant and well detailed by the author. The bond between the young Anna and her father is a prime example. Although they weren't blood relatives, Lawrence emphasizes the point that they love one another deeply and are constantly attached to one another. Tom proudly takes Anna with him into town and emphasized the reality of their intimate connection. The family ties are further seen in Anna's continuous motherhood. She becomes consumed with bearing children and makes her blood connection extend to many souls. The more visible or practical connection that is seen in this novel is the relationship between Anna and her husband, Will Brangwen. Since Will was a nephew to Tom,

the family connection is very strong and Lawrence uses that to bring Tom's relatives into close proximity with him at Will and Anna's wedding. The fact that Lydia and Anna had known the Skrebensky's before Ursula's interaction with Anton is another significant connection within the novel. Everything of importance seems to come full-circle in this novel as characters interact and continue to connect in physical and emotional ways. The internal and external realities of life are strongly connected as well. Each character reacts according to their internal drive, but always with consideration for those who are intimately joined to them. Will and Anna have a love/hate relationship that bonds them closely but also causes them to seek external relief, i.e. children for Anna and repairs in the church for Will. Ursula's relationship with Miss Inger is similar in that both desired an intimate attachment, but the outward display of that was very different. As Miss Inger marries into the Brangwen clan, yet another connection is made to unite the characters and their lives.

Similar examples of intimate bonding are found in Howard's End. Again, the family structure is significant in connecting characters, especially since the Schlegel parents are dead. The children are forced to depend on one another and to fulfill parental roles that add a different dimension to their relationships than might be expected otherwise. Meg and Helen share a special understanding that their Aunt Juley cannot comprehend, because she is not experiencing the same connection as they. A vital connection between society and the characters of the novel is

strived for. Many attempts are made by the Schlegels to be a part of cultured society. Trips to the symphony, Wickham Place, and the desire for wealth among the Schlegel sisters are all examples of the societal position that was so important to the girls. They viewed others in light of each one's relation to society and where they "fit in." Leonard Bast, for example, was considered to be beneath the Schlegels, because he was uncomfortable when they invited him in and he didn't have the financial means as they did. A deep and almost mystical connection existed between the Mrs. Wilcoxes and the ownership of Howard's End. Although each woman married Henry for a different reason, they both needed him the same. Ruth and Meg were very different in character, but quite similar in that they met Henry's needs at the time. Henry needed a domestic housewife and Ruth obliged. He wanted a fun and independent companion and Meg filled in. Both women were intimately connected with Howard's End. The old maid that mistook Meg for Ruth emphasized the connection between the two ladies and how Howard's End was both of theirs. The fact that Ruth desired to give Meg the home is not only ironic but important connection. Both women loved Howard's End and were committed to seeing it cared for.

The Portrait of the Artist as a Young Man flows with vital connections. All Stephen has to begin with is intimate bonds. The family ties that surround him are strong and even force him to take certain paths in life. He is sent to religious schools, because his family desires so. His

political views are influenced by his family discussions at Christmas. Stephen is never totally free from his family at school. Whether they arrive to see his play or whether he runs home to them after his epiphany on the beach, Stephen continues to run into his family at crucial moments in his life because of the connections between them. Stephen's deep searching of religion is another connection that influences his decisions. He decides not to join the priesthood or continue to practice Catholicism, because of his experiences at school. He struggled greatly when he was considering confessing his immorality and then struggled more after confessing and trying to live a rigid life of obedience that brought more pain. Stephen's friendships were special bonds that further challenged him to come to conclusions on various issues. The debates with Lynch and many others brought Stephen to a point of decision not to sign the petition and to stand against the popular flow of ideas. These connections are brought together at the end of the novel as Stephen decides to dissociate himself from all that once had held him together. The breaking of these bonds is significant, because they substantiate the fact that Stephen was joined with religion, family, school, and friends so intimately that he needed to break free in order to experience his individual identity.

Mrs. Dalloway is the perfect example of connection within a novel. The characters, places, events and time are all connected by various methods that enable the reader to understand the unity in the book. Characters are seem walking down the same street, yet experiencing

something very different. Richard and Hugh enter the same jewelry store and certain thoughts arise in both of their minds. They are different thoughts, yet sparked by the same source, and, therefore, similar experiences. The chiming of Big Ben connects all the characters with time and where they are on the time line of the day. The clocks enabled the author to transition easily from the different settings, thus bringing more unity to the entire work. The park also is a place of connection for those who walk or sit in it. Septimus and Rezia may be off in their separate world, but the park setting bonds them to London and the happenings of the day. The past is a strong connection for Peter, Sally, and Clarissa. As they each remember years gone by, they connect parts of their lives together and are able to related when the novel brings them back together. The past also connects the readers with the lives of the characters in a more real way. Mrs. Dalloway's party is the ultimate unifying element in the novel. It brings each of the characters together, whether in a physical sense or in a discussion of those present. The death of Septimus unifies Clarissa's notions about death with the reality of her party. As each character mingled and talked with others at the party, connections were being made and the characters were finally complete. The descriptions of the characters culminated as they were seen bonding and connecting with other people.

There is a definite structure in Modern novels. Contrary to what might be imagined, these authors have structured novels that are unified,

complete, and conclusive. Connections between characters and circumstances abound and bring many themes and ideas to life.



## Entry #7

I originally wrote the following piece as an entry in my writing journal. It is an example of writing about writing and how that can inspire further ideas for writing. This particular entry started out to be about freewriting, but discusses a myriad of other topics. Through freewriting, I learned to capture my thoughts on paper and not let them escape into my subconscious forever. I have found many topics worth expanding as I've gone back over my writing journal. The topics that come out in freewriting are especially conducive to expansion, because they come directly from the core of the writer's being. They are intense and compelling issues to write about. The key to creative writing is to tap the reservoirs of our minds and get the volumes of thought on paper. Once the ideas are down the creativity can begin.

The chemistry that flows between pen and paper became evident to me as I was typing this entry out. Typing is cold and mechanical, but handwriting is powerful and flowing. When my hand got tired, the writing changed to accompany the feeling. This effect is impossible with typing.

8-26-93

Freewriting has always been fun and relaxing for me. I never feel structured, stuck, or in a hard place. Freedom, wow that word has been coming up alot. Freedom, what a joy to experience in life. Freedom in Christ, writing, living, being. Dan and I have freedom in our relationship. Freedom to be me and not to worry about what he thinks or if he cares. Wow, I do honestly love him. I'm such a structured, organized, and controlled person at times that I find it hard to fully give myself over to something like this. I struggle with trying to find the right words and not stopping to correct spelling or punctuation. I'm utterly amazed that I am graduation in 9 mos. This time next year I will be married and living in the "real world". So what is the real world. No expectations, high expectations. Foreign or familiar. Foreign countries really draw me. How I would love to travel to another country (Australia) live and be a person of freedom. Share my faith and serve God. My hand is killing me. Wow, I've already got stuck in my thought process. I'd love to relax out in the sun and read a book that I want to read. The humidity would kill me, but at least I'd be enjoying myself. Dan needs to be here. Wow, 5 years is a long time especially when you're apart for most of it. lmdkhfa. I was trying to write with my left hand but failed. My entire arm hurts now. I want to play basketball or volleyball competetively again. What release that brought me. I would love to practice 3 hrs. a day in the ravaging heat again. Coach Tchoezewski and the gang. Going to state's for volleyball. It

seems that is my best writing centers on sports.

## Entry #8

Writing about other people's writing is one of the most insightful activities for a beginning student of writing. Analyzing and interpreting other's works can inspire new ideas and spark fresh perspectives for one's own writing. Poetry is a particularly fine genre to study, since it is filled with meaning and imagery. Reading poetry can help author's to think in imaginative and creative ways.

Langston Hughes' poem "Mother to Son" was quite an inspiration to my writing process. The poem itself, and my paper as well, focused on metaphor as a unifying technique between the concrete and the abstract. Surprisingly, this understanding has aided me in the writing of fiction. In order to clearly express a feeling or situation in fiction, I have found that using images and metaphors is very productive. The genres of writing are more interconnected than I had originally thought. Writing poetry, journaling, and even writing critical analyses can provide a basis for future attempts in fiction.

Pamela Barber

2-24-93

Dr. Miller

Eng. 349

The technique of metaphor is a form of comparison that emphasizes similar aspects of seemingly different objects. When used in poetry, it assists in bringing out characteristics of an object that are not readily associated with it. Since metaphor draws upon memory and the individual reader's experiences, it can evoke many associations in a small amount of space, and thus, is valuable in poetry. The acclaimed poet of urban blacks, Langston Hughes, relies heavily on the importance of metaphor in his poem "Mother to Son." Through this literary device, Hughes colorfully expresses the plight of urban blacks and "the hurts of their lives, the monotony of their jobs, and the veiled weariness of their songs." In the aforementioned poem, the poet relates the abstract concept of life to the more concrete notion of a staircase. By doing this, Mr. Hughes takes advantage of all the characteristics that are associated with a stairway and applies them to the experience of life. The struggle of urban blacks is seen through the eyes of a mother as she challenges her son to continue to climb the staircase of life. In "Mother to Son", the speaker equates the progression of life with two different types of stairs. Each stairway is a series of steps that lead to an ultimate destination just as life is a

sequence of events and milestones that lead to either success or failure, joy or despair.

The first staircase is constructed of crystal. Some of the aspects that are connected with crystal might be beauty, elegance, high-quality, clarity, and value. In metaphorically linking the stairway to life, Hughes allows these characteristics to be transferred to the reader's interpretation of life. An enjoyable life with love, happiness, and worth is suggested. A positive image of life and its rewards is brought forth through the use of the metaphor. The elegance of the crystal stair may impart an upper-class status in life that is secure and fulfilling. Clarity is another feature of this staircase that carries with it many similarities to life. Hughes links this clarity to the hope and vision one can have when given the opportunities necessary. Thus, a "crystal staircase" type of a life would have a clear future that is in focus. The value of such a life would be similar to that of a priceless crystal stair.

In contradiction to the elegant crystal stairway, the poet introduces another stair that is dilapidated and wooden. This winding staircase is full of tacks, splinters, and torn up boards. These imperfections can be related to the obstacles and difficult times that can be experienced in one's life. Hughes uses the fact that no one enjoys getting a splinter, sitting on a tack, or falling through a broken floor board just as most people do not appreciate the struggles that are associated with life. Furthermore, the staircase has no carpet on it. It is bare. When

associating this stair with the life, one might imagine that the mother is referring to her lonely and harsh life. She is alone in her endeavors and climbs a hard wooden stair that has no soft covering. Life for the speaker is anything but easy and enjoyable.

The metaphor of the staircase is displayed further in the description of the darkness of the wooden stair. As opposed to the brilliance of the crystal one, the wooden stairway is without any light. This absence of light can be linked to the darkness that one may experience in life when they are without direction, hope, or vision for the future. Through the use of this metaphor, the mother is acknowledging a lack of guidance and insight that has rendered her unable to make and reach goals in life. The staircase has been an eternal progression of turning points and landings just as her life has been an upward struggle with moments of refreshment and new decisions to make. In reading the description of this staircase, one would not be eager to traverse it. Likewise, the life that this stairway can be related to is not beautiful or appealing.

In keeping with the staircase metaphor, the mother urges her son not to sit down on the steps or fall down. In essence, she is encouraging him to strive for the best out of life and not to get discouraged when one step of life seem too harsh to take. She uses her own life as an example of success in that she has made it this far and he can too.

Langston Hughes employs metaphor quite effectively in this poem. In viewing life as a staircase, the speaker in the poem emphasizes the

realities of life as a black person in the urban community in a way that is not restricted by the poet's words. The metaphor leaves the poem open for interpretation according to the experiences of the reader.



## Entry #9

There is a vital connection between the spoken word and the written word that often gets overlooked and ignored, but which is very important to effective writing. A writer must be aware that what is written must not only look good on the page, but it must also sound appealing to the listener's ear. Whether reading aloud or not, sounds are transmitted to our brains when we read. In order for interest to remain, the sounds that are transmitted must be enjoyable and attractive.

Never before had I considered sounds as being crucial to writing. What helped me to understand this connection was my study of comparative linguistics. Writing this paper was enlightening. I began to understand that what is heard is more important than what is seen. Reading narratives and poems aloud proved this to me. The works that I liked the most were the ones that sounded appropriate to the mood or tone that was being presented.

I have begun to read my finished pieces of writing aloud as a means of revision. If it doesn't sound good to me, it probably won't be interesting to anyone else. After all, words were meant to be spoken, not just looked at.

Pamela Barber

English 322

Mrs. Horvath

12-6-93

### Comparative Linguistics and Indo-European

Most people take great pride in their native language. There is a natural attachment and love for the uniqueness of one's spoken tongue. Thus, when considering other languages, we tend to look at how they differ from our own rather than what similarities might exist. In fact, there are many resemblances between languages that are easily overlooked by the untrained eye. Investigating these likenesses allows individuals to develop a better understanding of and respect for other languages.

Comparative or contrastive linguistics is a method that helps evaluate some of the many similarities and differences between languages. This approach to language study involves researching "sounds, formations, vocabulary, and syntax of different languages derived from a common ancestor" (Williams 1). By comparing the morphologies, phonologies, or vocabularies of sister languages, this common predecessor can be reconstructed. Indo-European, which will be discussed later, has been determined to be this initial source for the Germanic languages,

which English is derived from. Studying and explaining the relationships among the Germanic languages is efficiently done with the comparative method of linguistics.

The first step in comparing languages is to hypothesize as to how the similarities came about and then to research those possibilities. Gleason gives four possible reasons for the existence of similarities between languages (3). The first of these would state that similarities are reflective of universals in language, such as the wide use of "mama" for mother. Other words that represent body parts, numbers, animals and plants also reflect a universal language pattern, especially in the Indo-European languages. Analytical artifacts can also be an explanation of language resemblances, according to Gleason (3). For example, the reality that both English and Latin have a present tense can be attributed to the fact that English was structured after Latin and, therefore, contains structural similarities. Simple chance could also be considered a reason for likenesses between languages, but Gleason considers this an insignificant one (3). The last possible origin of similarities that he refers to is also the most important, historical connections.

Historical connections between languages are important, because they provide information pertinent to the reconstruction of the mother language. Two types of such connections would concern whether a word is inherited or borrowed from another language. Inheritance traces similar words from different languages to a common ancestor, while borrowing

would show how one word derived from the other language being compared. This historic approach to studying linguistics is what comparative linguistics is primarily concerned with.

It has been mentioned that when considering what aspects of a language to compare, linguists usually focus on morphology, phonology, and vocabulary. Each of these comparative systems have their benefits and disadvantages, but vocabulary seems to be the most useful for finding similarities between languages. As Meillet asserts, morphology (the process of grouping words to form sentences) is the most consistent aspect in language. However, the general structure varies so drastically from the ancestor language that it can not be used effectively in a comparative setting (36-38).

When studying phonology, another problem arises. Although correspondences between languages and their common predecessor obey fixed rules, relationships between the two languages being compared do not. Meillet explains that the languages can vary greatly from one another, but still maintain similarities that can only be recognized in reference to the mother language. When pronunciations change over time, they do not do so in isolation by affecting only a word or two. Instead, the whole phonological systems of the various languages are altered separately. This makes the only possible point of similar reference the common ancestor of the languages (44-5). Thus, just as in morphology, connections are vague and not easily seen.

After eliminating morphology and phonology as possible approaches to comparative study, we are left with the different vocabularies. Vocabulary is an unstable part of language, because it changes from speaker to speaker no matter what language is being spoken. Words can also disappear from vocabularies and change forms quickly. Although this is a disadvantage for studying vocabularies, the benefits are more important. Since vocabularies are readily available and correspondences between languages are so easily seen, it is more worthwhile to compare vocabularies than the grammar or phonology of a language.

Linguists begin by collecting vocabulary lists and looking for correspondences. Gleason explains that these correspondences involve comparing specific phonemes in special environments with other phonemes in another language and see if they are cognate, or of common origin (5). One means of doing this might be to notice if two words simply sound alike. This is called phonetic plausibility. It is often helpful to take note of words-pairs that appear often in a comparative list first and then apply phonetic plausibility.

Through such techniques, the various languages descended from Indo-European can be compared and relationships found. According to Williams, the Indo-European language was highly developed with an extensive vocabulary. It originated in central Europe and had many different dialects (17). Because of the vast area in which this language was spoken and the different dialects that arose, the Indo-European

language was not homogeneous to begin with. The various daughter languages were allowed to develop in individual ways on parallel tracks, according to Jakobson (242). These separate tracks shared a common foundation of words and structure, and associations between these languages were cemented.

Jakobson goes on to express the need that humans have for mutual communication and to understand one another (244). This need finds partial satisfaction when two languages are similar enough to be comprehended by their speakers. The languages that would most likely be mutually intelligible would be those from a common ancestor like Indo-European. In his article on intelligibility, Nida says that languages can only be partially mutually understood. The words themselves may be understood, but connotative meanings can often be misinterpreted. Also, one language may understand another more readily than vice-versa. For instance, Portuguese speakers understand Spanish easier than Spanish do the Portuguese(244). English and Frisian are two languages that have many similarities as well. Frisian words such as herta, dei, and tunge are quite recognizable to the English who would write heart, day, and tongue.

Comparative linguistics is a great way to break down some of the barriers between languages. By noticing similarities, we can have a better understanding of other languages while still respecting the various differences that make them unique. Whether it be through studying morphology, phonology, or vocabulary, languages can be related to one

another and can be seen as representatives of a unified and common language like Indo-European.

## Entry #10

Writing dialogue is one of the most difficult tasks in my writing process. I dread putting conversation into my works, but I realize that it is often needed to develop characters in an effective and clear way. Placing myself in another's position and speaking from that point of view was too much for me as a beginning writer of creative prose.

In order to make this adjustment somewhat easier on me, I wrote a dialogue from a point of view to which I could relate. The words came easily and my fears of writing dialogue began to subside. I wrote about my personal opinion, but gave different characteristics to the speaker. This gave me a freedom to write as I normally would speak. Since speaking is natural, creating such dialogue became so too.

Creating the other characters' words was more difficult, but gave me another idea of how to approach dialogue. This time I imagined writing from someone else's point of view. I wrote what I expected that other person might say. Now, this may sound simplistic, but it actually helped me and gave me confidence in writing conversation. My fear of dialogue still exists, but I am slowly learning to conquer it through experiments like this one.



Pamela Barber

Eng. 286 (#2)

Nov. 23, 1993

"Peace I give you. My peace I give unto you. I do not give to you as the world gives. Do not let your hearts be troubled and do not be afraid."

John 4:27

She was a "permanent smile" type of person. You know the kind. They have a sort of glow about them and their lips are always parted and curved upward. Brice thought it unreal to imagine that nothing had ever gone wrong in her life. In fact, he knew otherwise. Yet she continued to be positive, joyful, and most of all, at peace.

"Good morning, Brice."

"Hello, Mrs. Barton."

"A beautiful day isn't it?"

"I've seen better. It's kinda cloudy out."

"I thought I was noticing a ray of sun peeking from behind those clouds of yours just a minute ago. Keep your chin up and you'll be sure to see it too."

"Why do you always see the good in everything, Mrs. Barton? Don't you ever have a bad day? I can't believe that life is perfect for you."

Mrs. Barton did not even flinch at the series of questions. She'd been

interrogated before for her optimistic and content nature. She felt these times were perfect opportunities to spread a little hope and cheer to a dying world.

"My dear Brice. Of course my life is not without problems, but I fail to see a necessity in making life problematical. If we take life for what it is, temporary and harmless, we are able to enjoy it to the utmost! Something as trivial as a 'bad day' need not impede a glorious existence. Relax and have faith my boy."

"Faith in what? There's not much here to trust in," Brice said with disdain. "People, circumstances, even nature can hurt and fail me. Give me something to put my faith IN."

"That's just the point. If we continue to look to discontent sources for our peace, we won't find it. Only peace can yield peace. You need something stable to cling to. Grab a rock. Find a fortress. You need refuge."

Her face continued to smile and her eyes shone with radiance. It didn't come from within her, but it surrounded and transcended her. Brice was drawn to her yet still confused by her words. The irritation he had felt was melting away.

"I want to know what it is. Give it to me plain and simple. What will make me happy? I really want to know. Can you give it to me?"

"Hold on young man, " she chuckled. "I can tell you what has given me joy, but you must take it for yourself. Let me remind you, however, all

great things come at a price. You've got to be willing to pay. It's more than worth it, but you've got to be willing to give up total control of your life. It's a commitment like this world has never known. Still interested?"

"I think so. Tell me what it is and then I'll decide."

"That's just the way He planned," she affirmed. "Let me start with an introduction. I'd like you to meet my friend Jesus...Jesus Christ."